HYPERTHERM®
A Hypertherm Associates Brand

XPR® Ignition Upgrade

Field Service Bulletin

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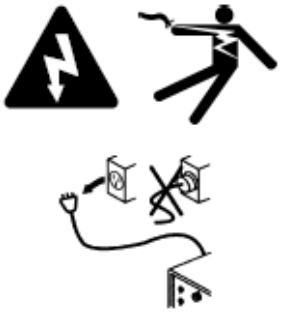
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Introduction

⚠ WARNING



ELECTRIC SHOCK CAN KILL

Disconnect electrical power before doing any installation or maintenance.

All work requiring removal of the plasma power supply outer cover or panels must be done by a qualified technician.

See the *Safety and Compliance Manual* (80669C) for more safety precautions.

⚠ WARNING



ELECTRIC SHOCK

Stored voltages in capacitors can exceed 20,000 V.

All work must be done by a qualified technician.

Purpose

This Field Service Bulletin describes how to install the gas connect console ignition upgrade kit to replace the legacy ignition circuit components, ignition PCB 141354 and ignition coil 229837, which will both be no longer salable.

The updated ignition circuit design is not backwards compatible. It is necessary to use all components included in this one-time upgrade kit to enable compatibility with current production ignition circuit replacement parts. Once this one-time upgrade is complete, use kit 10088682 for future ignition PCB replacements and kit 10088683 for future ignition coil replacements.

This upgrade kit is applicable to the following XPR® Gas Connect Consoles (GCC): Core™, VWI™, and OptiMix™ **with a serial number lower than 5000**. Please verify your console's serial number before beginning.

GCC	P/N	S/N cut-in
Core™	078631	XPRC-005000
VWI™	078632	XPRV-005000
OptiMix™	078633	XPRO-005000

10088684 Kit Contents

Part Number	Description	Quantity
Not for Sale	Ignition panel assembly	1
Not for Sale	EMI filter relocation bracket assembly	1
Not for Sale	Transformer insulator	1
Not for Sale	Decal	1
Not for Sale	Ignition board grounding wire	1
Not for Sale	EMI filter grounding wire	1
Not for Sale	Replacement part label	1
10088687	XPR ignition circuit upgrade FSB	1

Required tools and materials

- Number 2 Phillips® screwdriver
- Number 3 Philips® screwdriver
- Blade screwdriver
- 3 mm hex key
- 5.5 mm wrench
- 1/4-inch wrench
- 3/8-inch wrench
- 9/16-inch wrench
- 3/4-inch wrench
- 5/8-inch wrench
- 18 mm wrench
- 30 mm wrench

Instructions

⚠ WARNING



ELECTRIC SHOCK CAN KILL

The plasma power supply contains dangerous electric voltages that can seriously injure or kill you. Even if the plasma power supply is turned OFF, you can still get a serious electric shock if the plasma power supply remains connected to an electric power source.

Use extreme caution if you do diagnosis or maintenance tasks when the plasma power supply remains connected to an electric power source and the outer cover or panels are removed. All work that requires removal of the plasma power supply outer cover or panels must be done by a qualified technician. Refer to the *Safety and Compliance Manual (80669C)* for more safety information.

Remove coolant from the cutting system

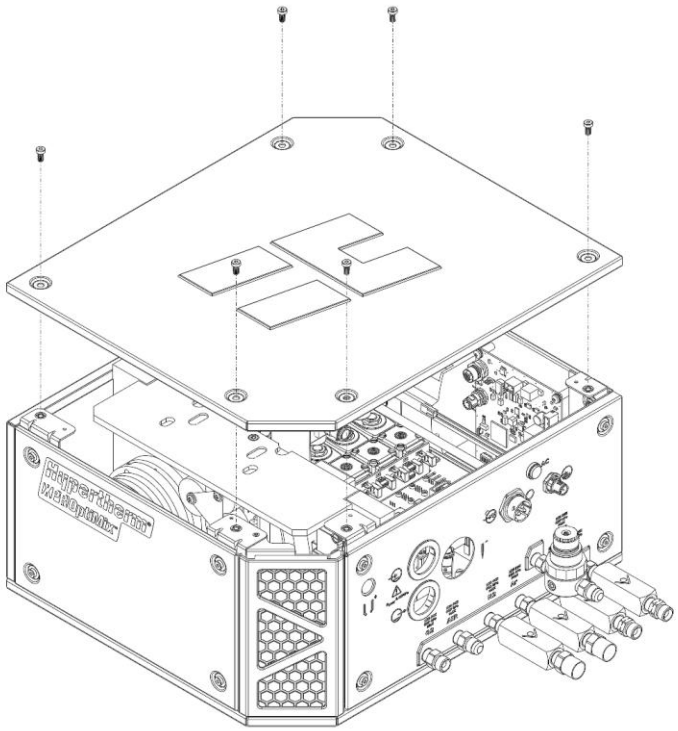
1. Remove the coolant from your cutting system. For information on how to do this, refer to the instruction manual that came with your cutting system. If you do not have your manual, it can be found in the Hypertherm Document Library: https://www.hypertherm.com/resources/documents-library/

Prepare the gas connect console

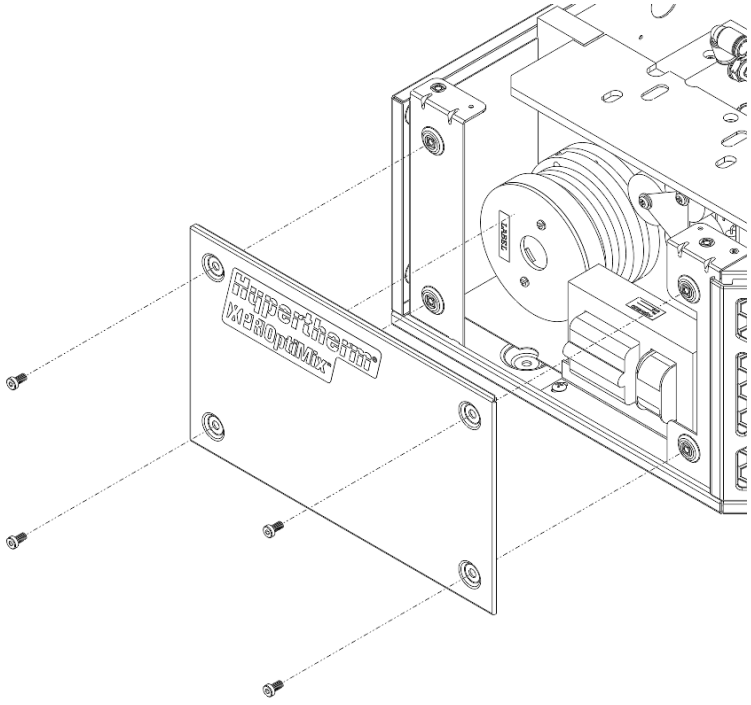
2. Remove power from the cutting system per the instruction manual.
3. Disconnect all supply gases
4. Make sure the gas connect console is correctly grounded per the instruction manual.
5. During this installation process, be sure to preserve all hardware removed from the console for later use.
6. Note that an XPR OptiMix gas connect console is shown in this field service bulletin. However, the procedure described below applies to the following types of XPR gas connect consoles: Core, VWI, and OptiMix.

Remove cover panels

7. Use a 3 mm hex key to remove six top cover panel screws and the top cover panel from the gas connect console.

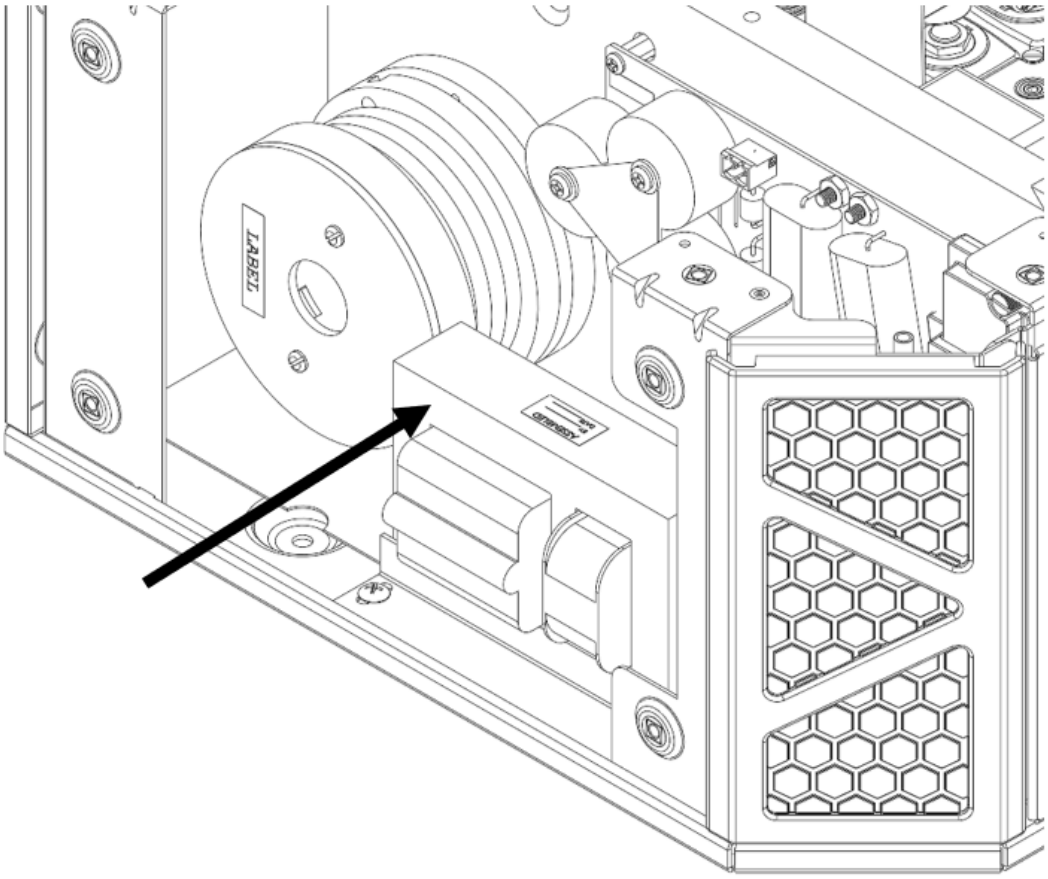


8. Use a 3 mm hex key to remove ignition side panel screws and cover panel.

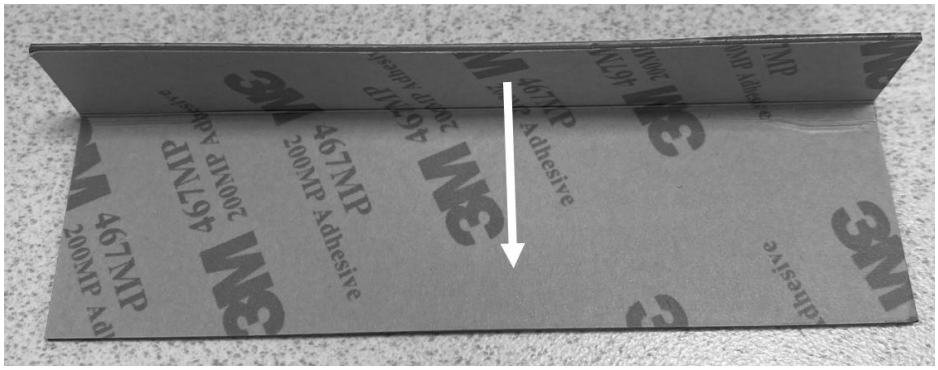


Install adhesive insulator

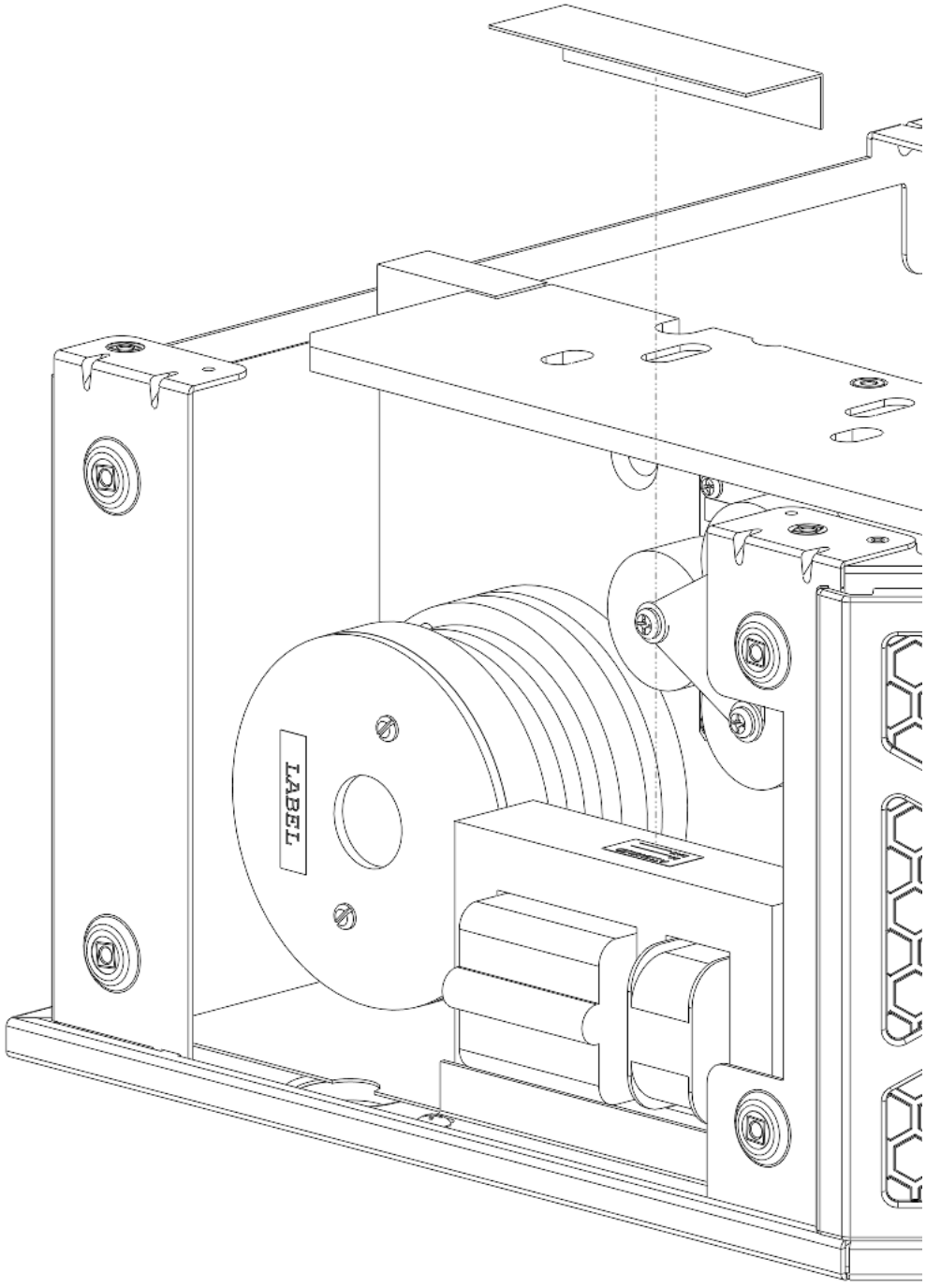
9. Find the high-frequency, high-voltage transformer (229838) on the console. Refer to the instruction manual that came with your cutting system for location.



10. Remove sticker backing from plastic transformer insulator included in the kit.



11. Place the adhesive side of the insulator on the transformer. Make sure the long side of the insulator is on top of the transformer, the orientation is correct, and that the insulator is centered on the transformer.

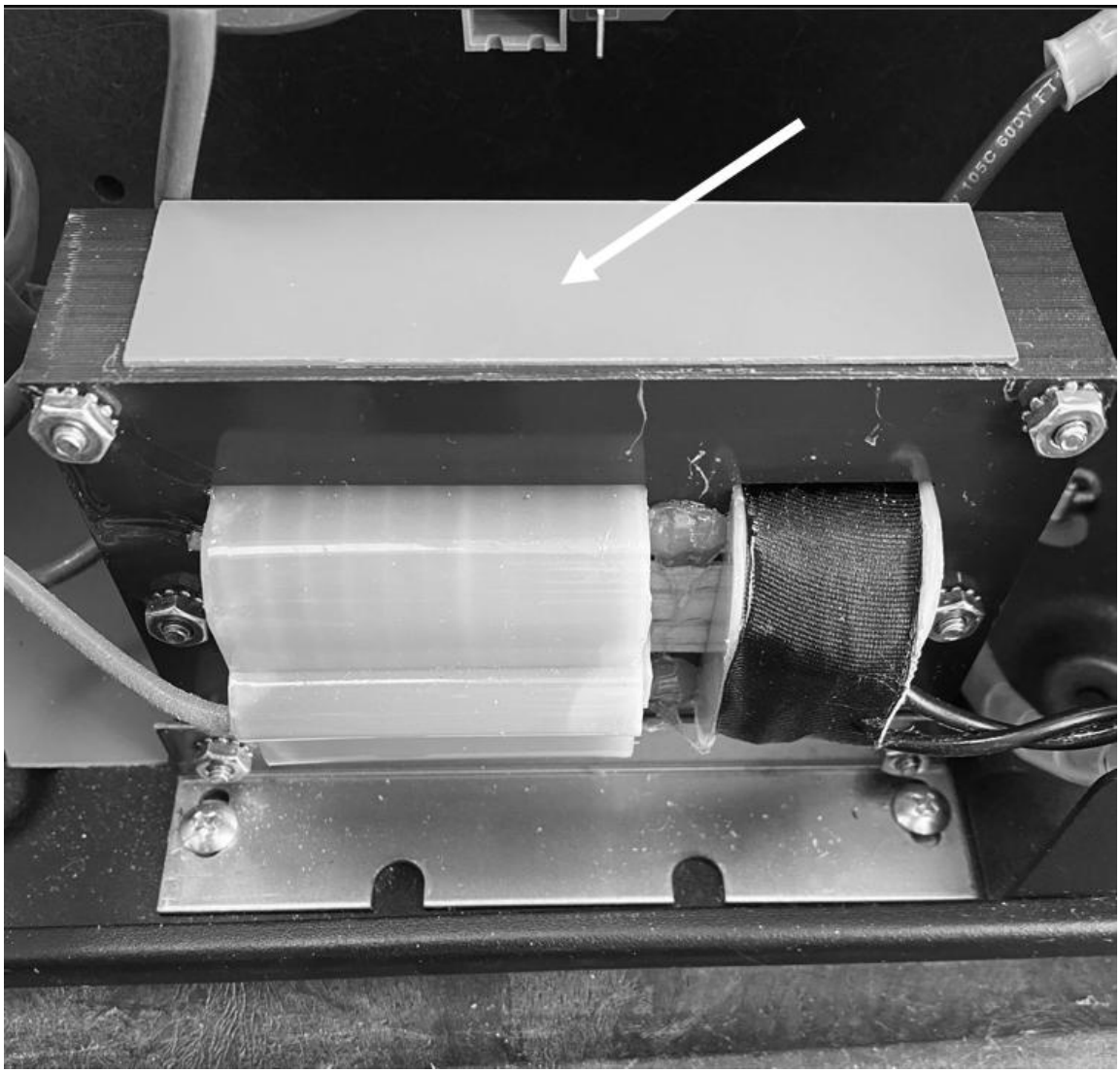


⚠ WARNING

ELECTRIC SHOCK CAN KILL

The plasma power supply contains dangerous electric voltages that can seriously injure or kill you.

Before proceeding to next step, verify insulator is in place and orientation is correct.

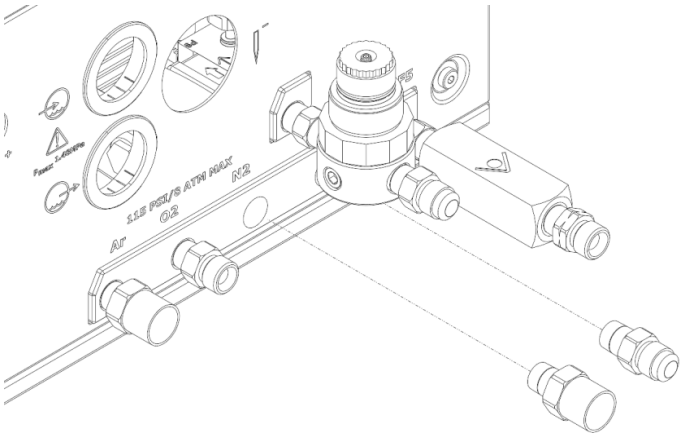


Disconnect the gas connect console from the TorchConnect™ console and the plasma power supply.

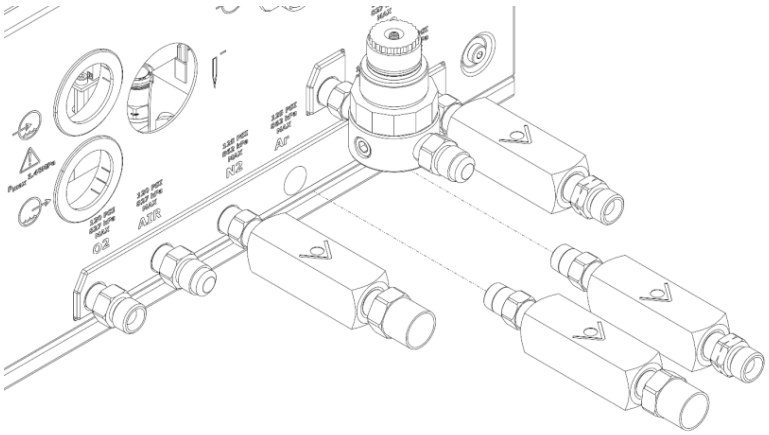
12. Refer to the instruction manual that came with your cutting system to disconnect the following connections:
    a. Disconnect coolant hoses from the gas connect console.
    b. Disconnect pilot-arc, power, CAN, and gas connections from the gas connect console.
    c. Disconnect the negative cable.

Remove gas input and output side cover panels

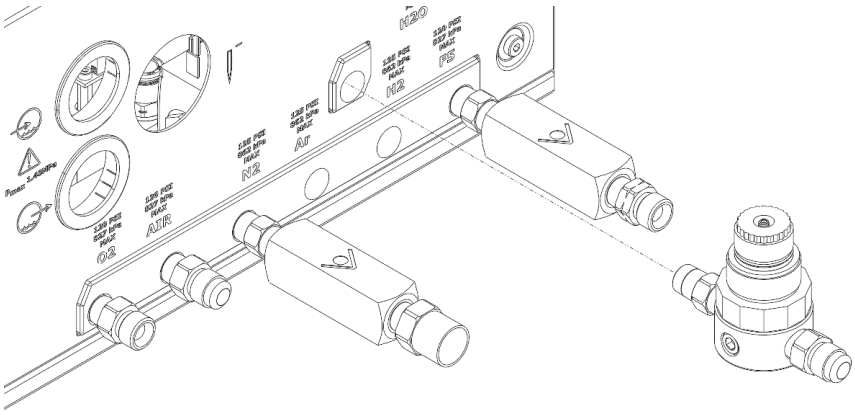
13. If you have a Core gas connect console, skip to step 14.
    a. If you have a VWI gas connect console, use a 3/4-inch wrench to remove the fitting for N_2, and use a 5/8-inch wrench to remove the fitting for the air line from the gas input manifold.



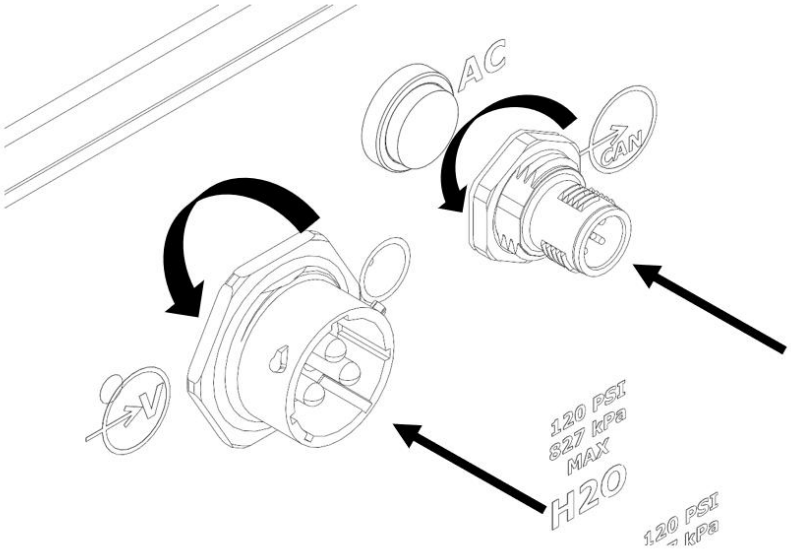
    b. If you have an OptiMix™ gas connect console, use a 9/16-inch wrench to remove check valves and fittings for argon and H_2 line from the gas input side manifold.



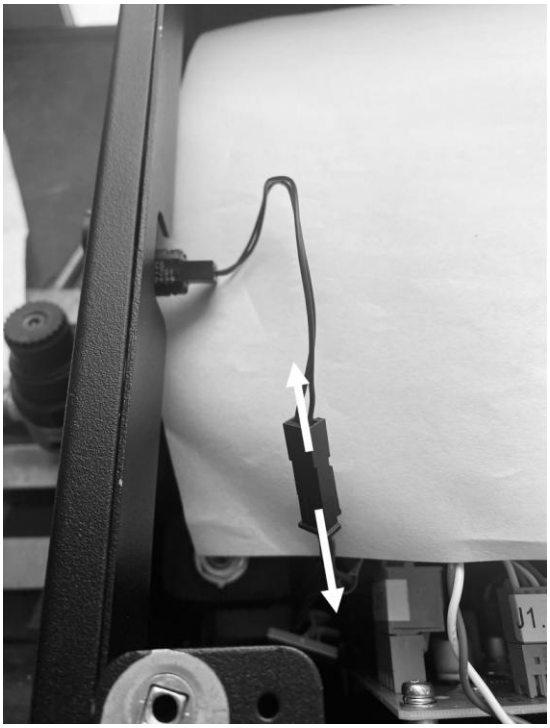
c. Use a 9/16-inch wrench to remove water regulator and fittings from the gas input manifold.



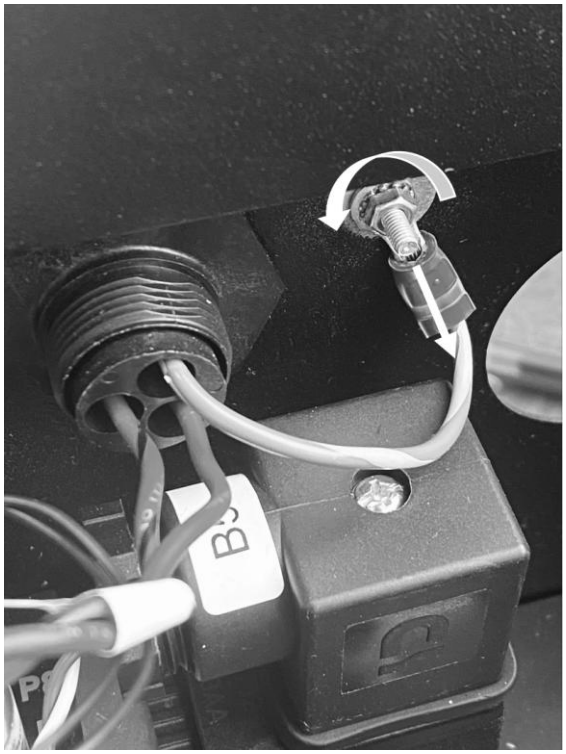
14. Use a 30 mm and 18mm wrench to remove the panel nuts from the receptacle housings for CAN and power on the input (power supply) side.



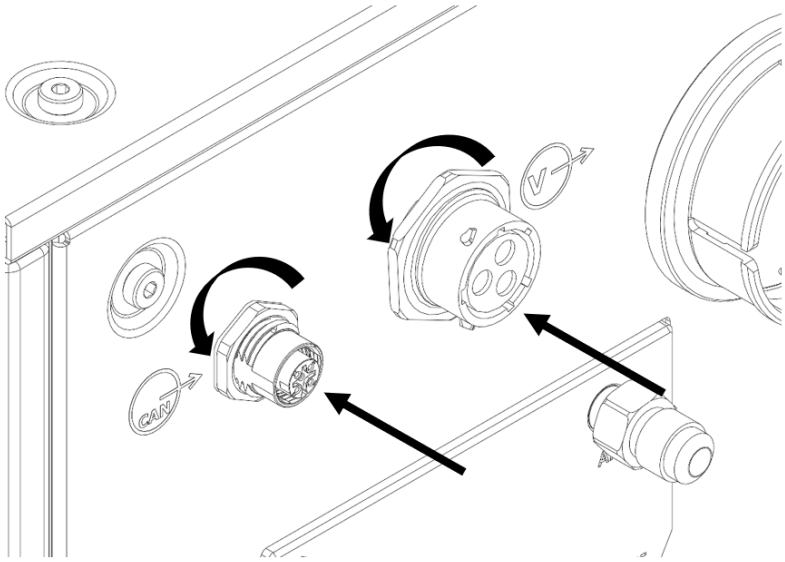
15. Disconnect the AC light cable on input (power supply) side of the gas connect console.



16. Use a 5.5 mm wrench to remove the M3 kepnut and ring terminal from power connector receptacle on input (power supply) side.



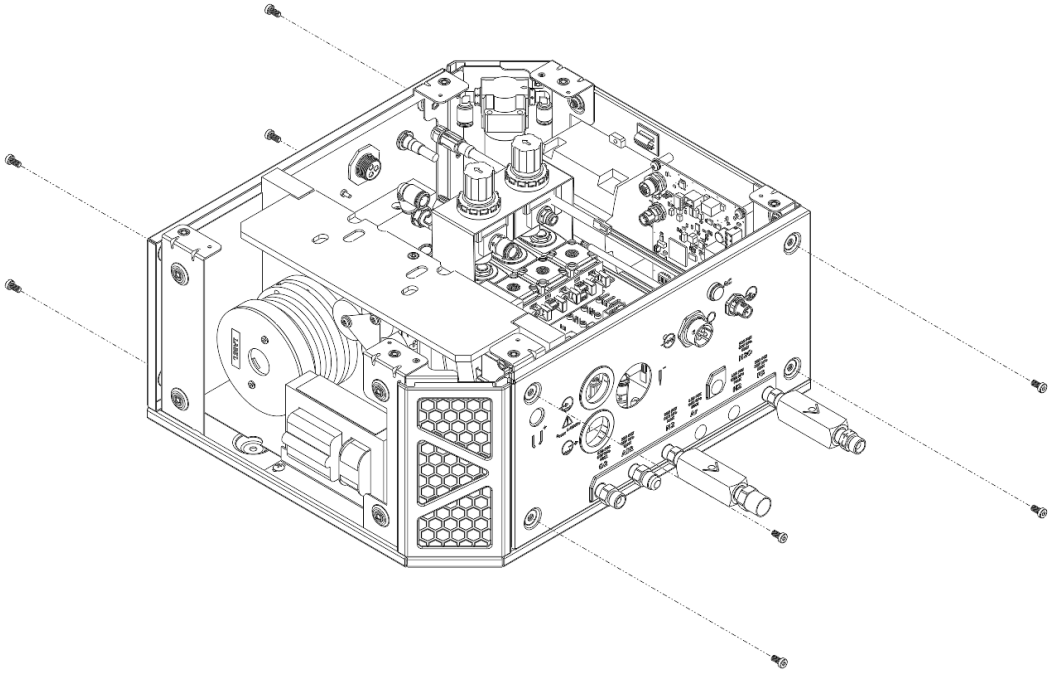
17. Use a 30 mm and 18 mm wrench to remove the panel nuts from the receptacle housings for CAN and power on the output (TorchConnect console) side.



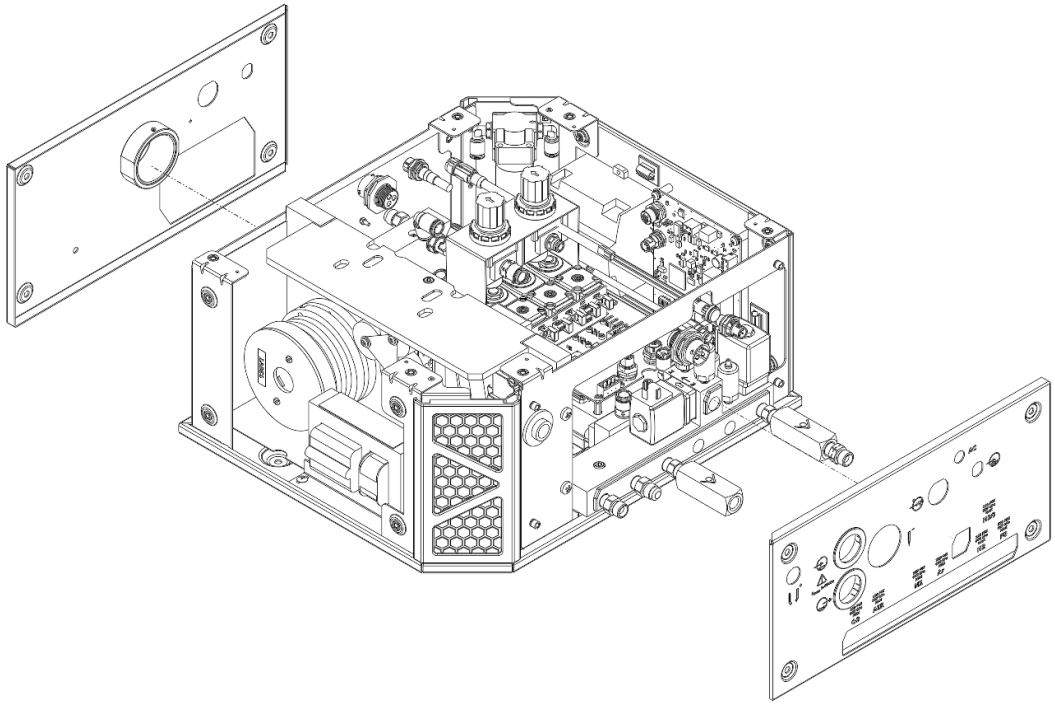
18. Use a 5.5 mm wrench to remove the M3 kepnut and ring terminal from the power connector receptacle on the output (TorchConnect console) side of the gas connect console.



19. Use a 3 mm hex key to remove both gas input and gas output side panel screws.

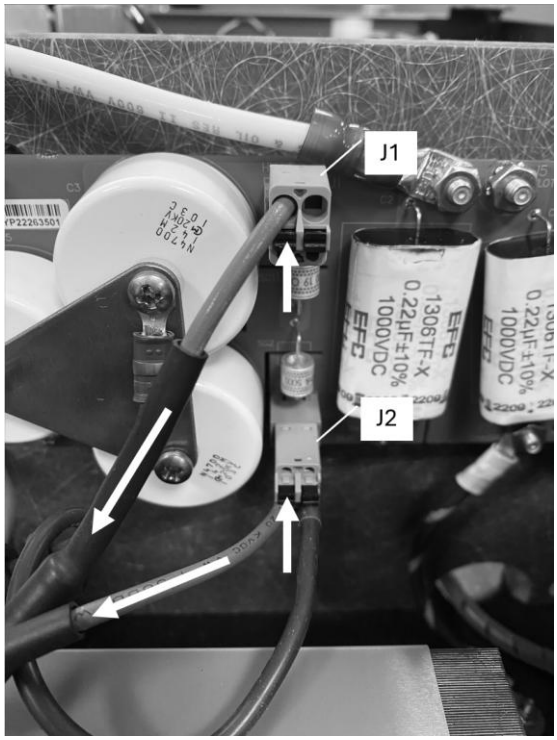


20. Remove both gas input and gas output side panels.



Disconnect ignition board connectors

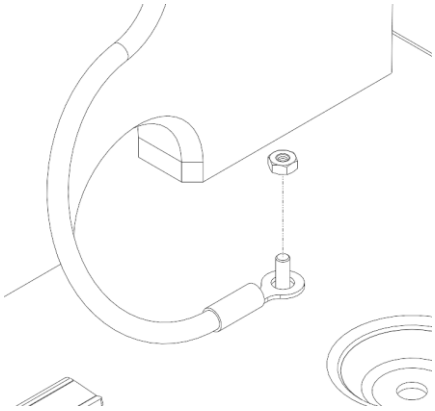
21. Remove the two red wires connecting the high frequency-high voltage transformer (229838) to ignition board labeled J1 and J2 by pushing the release button on the connector.



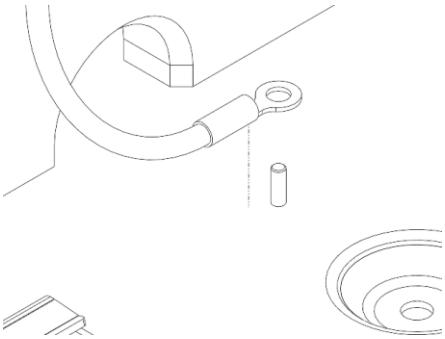
22. Disconnect the ignition board grounding wire:



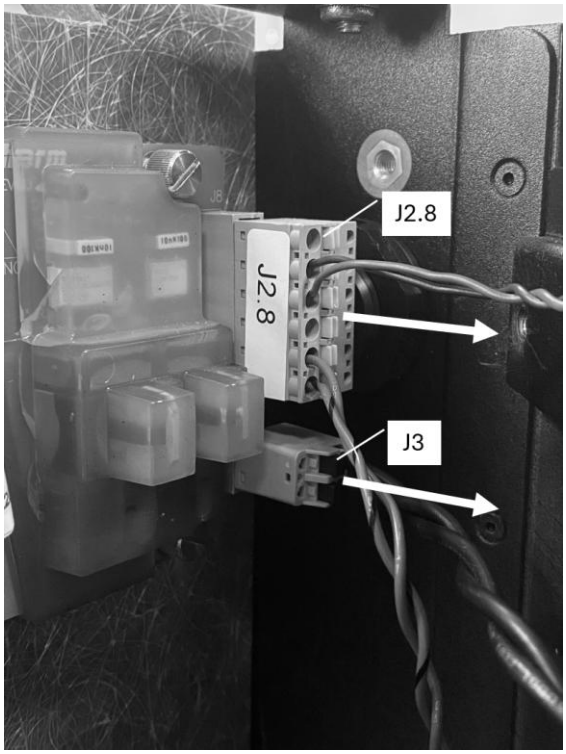
a. Remove the M3 hex nut on the bottom panel of chassis (high frequency-high voltage transformer 229838 hidden for clarity).



b. Disconnect ignition board grounding wire from chassis.

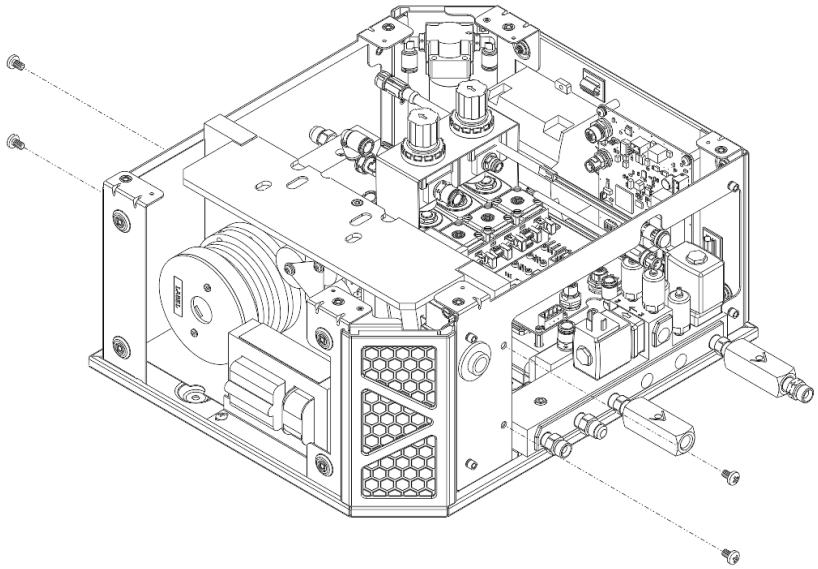


23. Disconnect the connectors at J2.8 and J3 from ignition board.

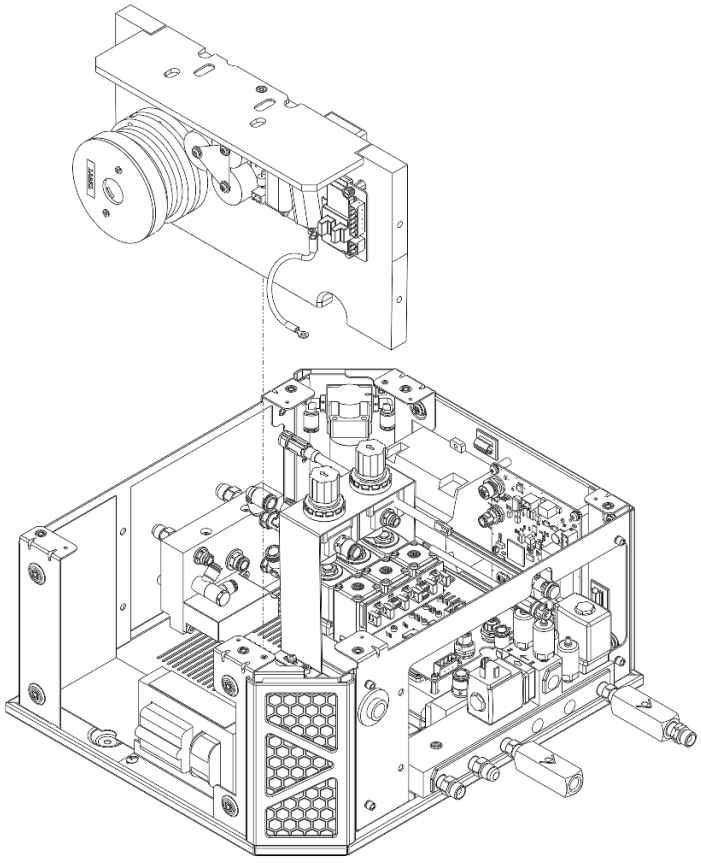


Remove ignition panel assembly

24. Use a number 3 Philips screwdriver to remove the screws (two on each side) from ignition panel assembly.

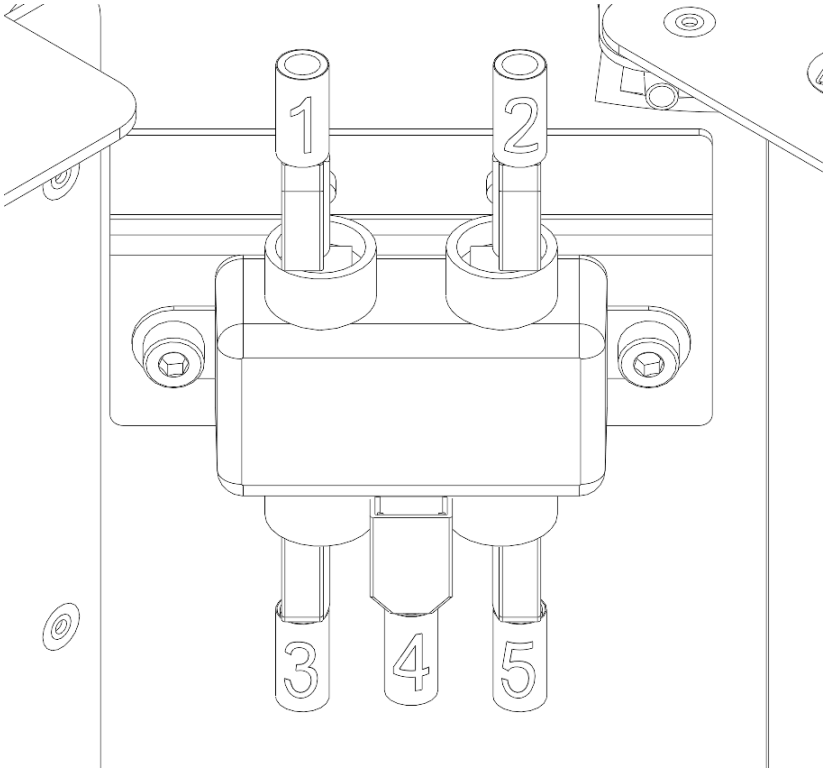


25. Lift the ignition board assembly out of the console.

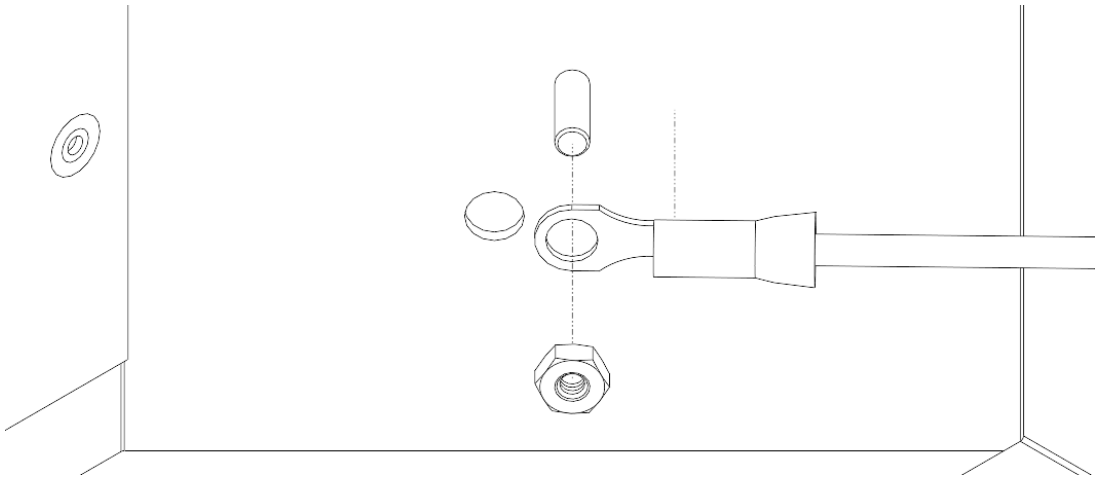


Remove EMI filter

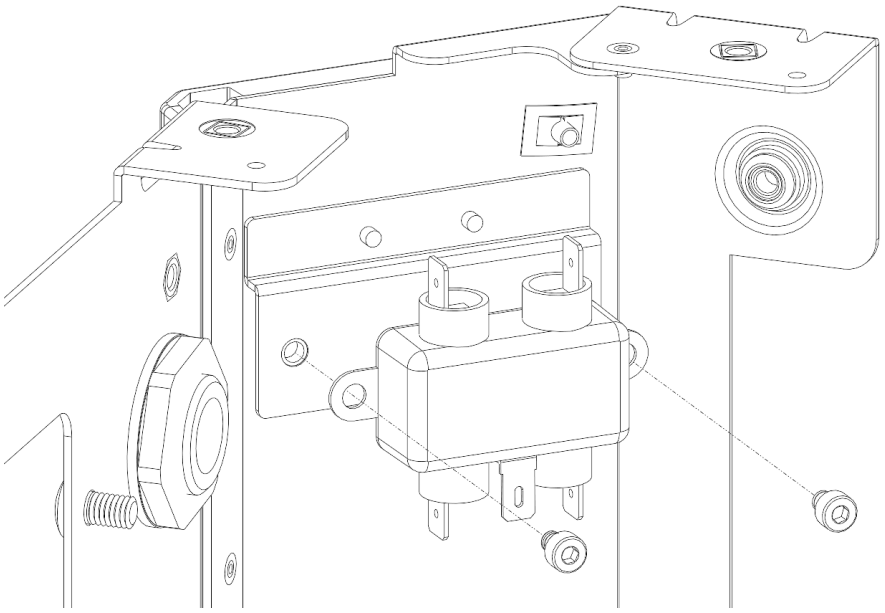
26. Disconnect all connectors (labeled 1-5) on EMI filter.



27. Use a 5.5 mm wrench to remove the M3 kepnut that holds the EMI filter grounding wire.

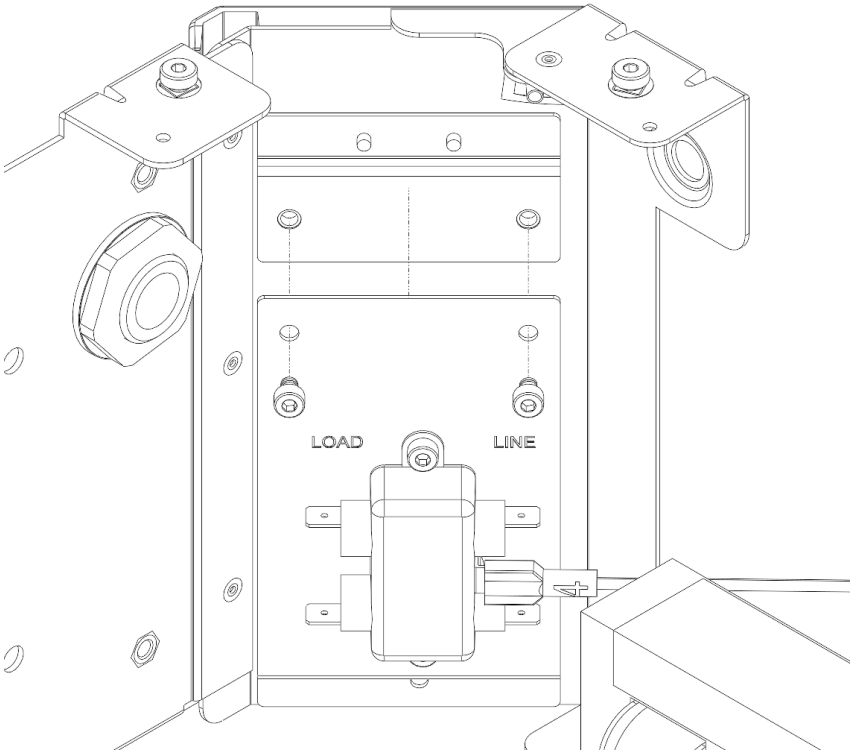


28. Use a 3 mm hex key to remove two M4 socket head cap screws that hold the EMI filter in place.

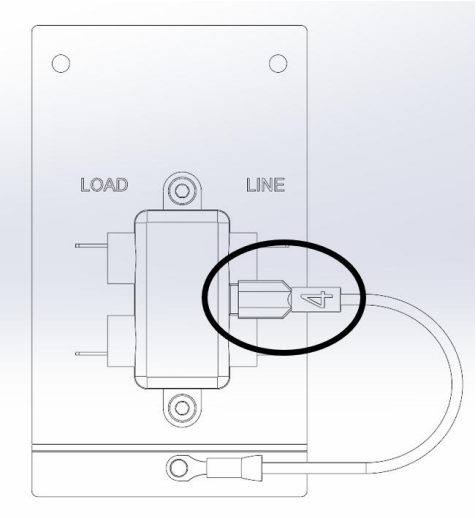


Install EMI filter relocation bracket

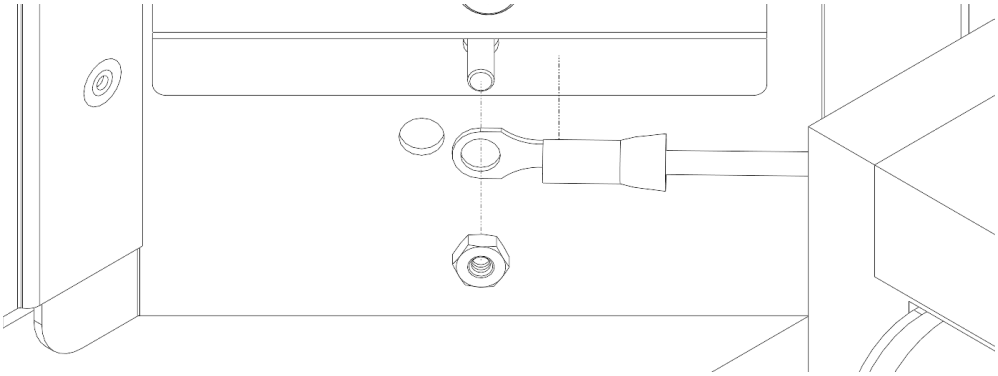
29. Use a 3 mm hex key and the two M4 socket head cap screws to install the EMI filter bracket subassembly.



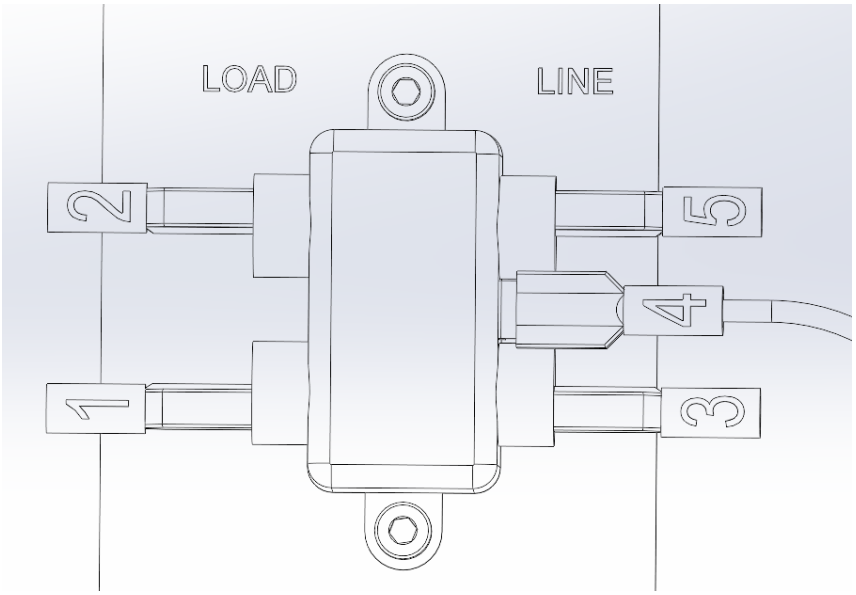
30. Find the grounding wire pre-installed on the EMI filter bracket assembly.



31. Use a 5.5 mm wrench and the M3 kepnut to install the grounding wire ring terminal on the threaded stud underneath the EMI filter.

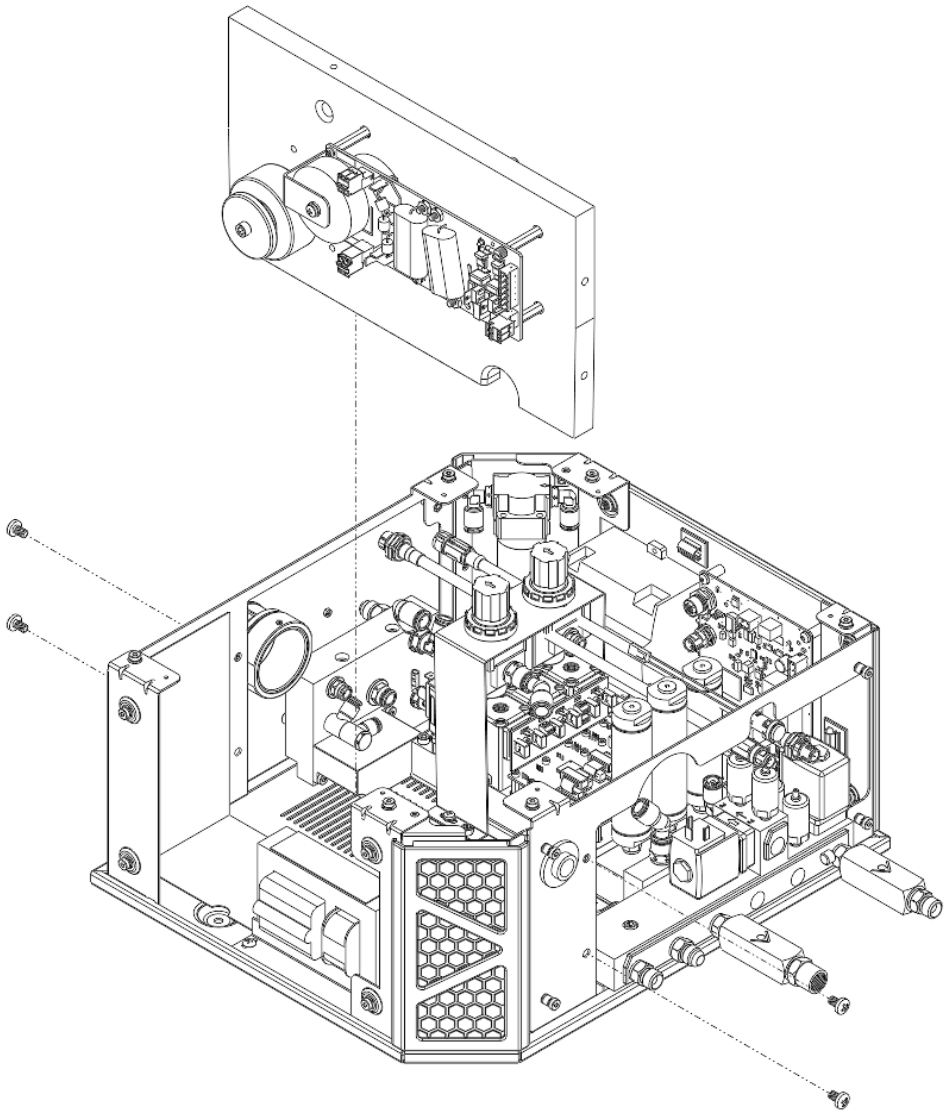


32. Install all connectors (1,2,3, and 5) from the main wire harness to the EMI filter in the correct position for each connector on the “LOAD” side and the “LINE” side.



Install new ignition panel assembly

33. Use a number 3 Philips screwdriver and four number 3 Philips screws to install the new ignition board assembly. Tighten to 1.0 to 1.2 Nm (9 to 11 in-lbs). Reference steps 24 and 25.

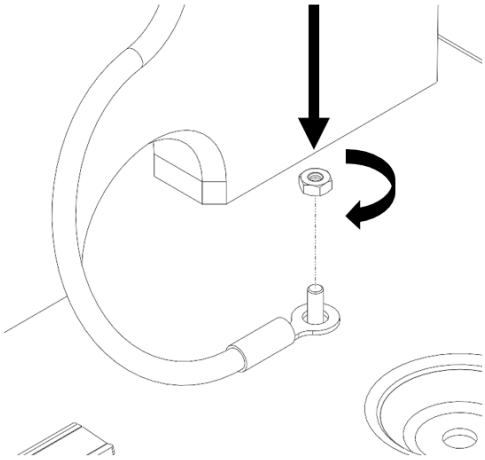


Connect ignition board and transformer wires

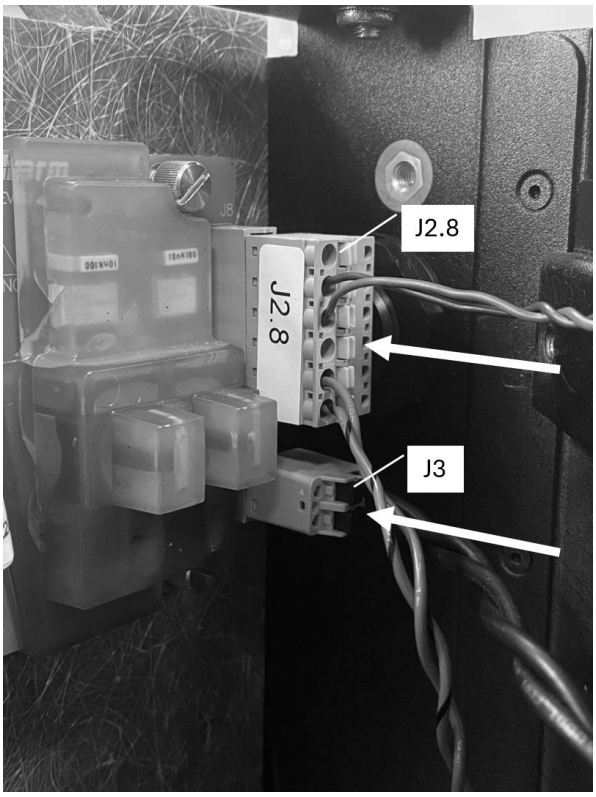
34. Find the grounding wire that is pre-installed on the new ignition board.



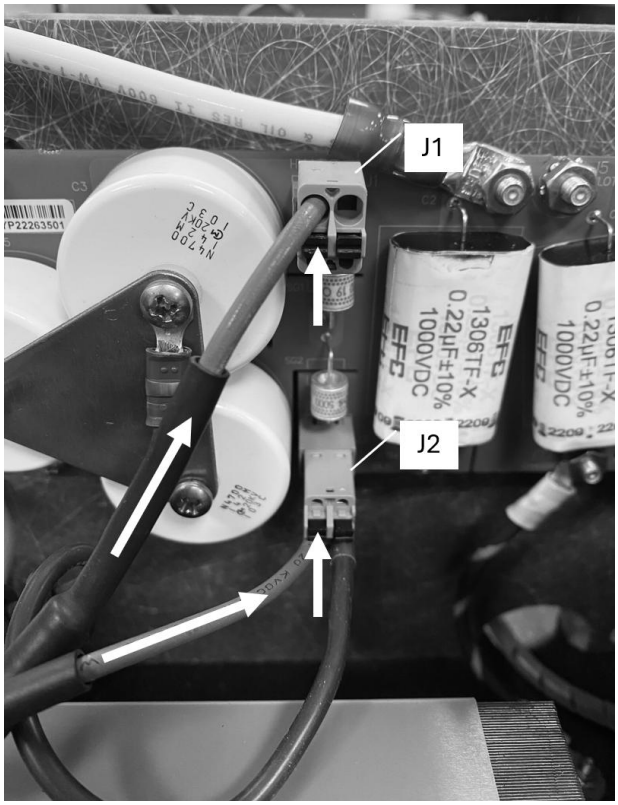
35. Use a 5.5 mm wrench and M3 kepnut to connect the ignition board grounding wire to console chassis. Tighten to 1.0 to 1.2 Nm (9 to 11 in-lbs).



36. Install connectors J2.8 and J3 on the ignition board.

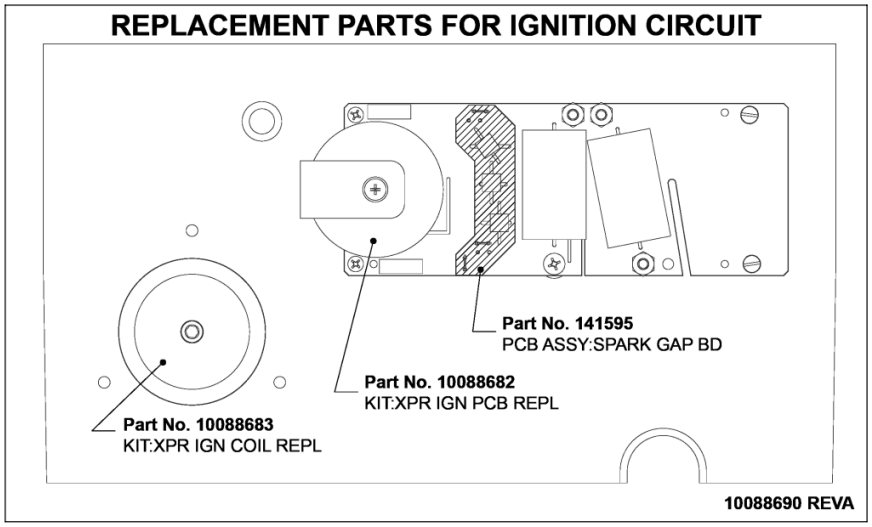


37. Install the two red wires from the high frequency-high voltage transformer to J1 and J2 on the new ignition board. Reference step 21.



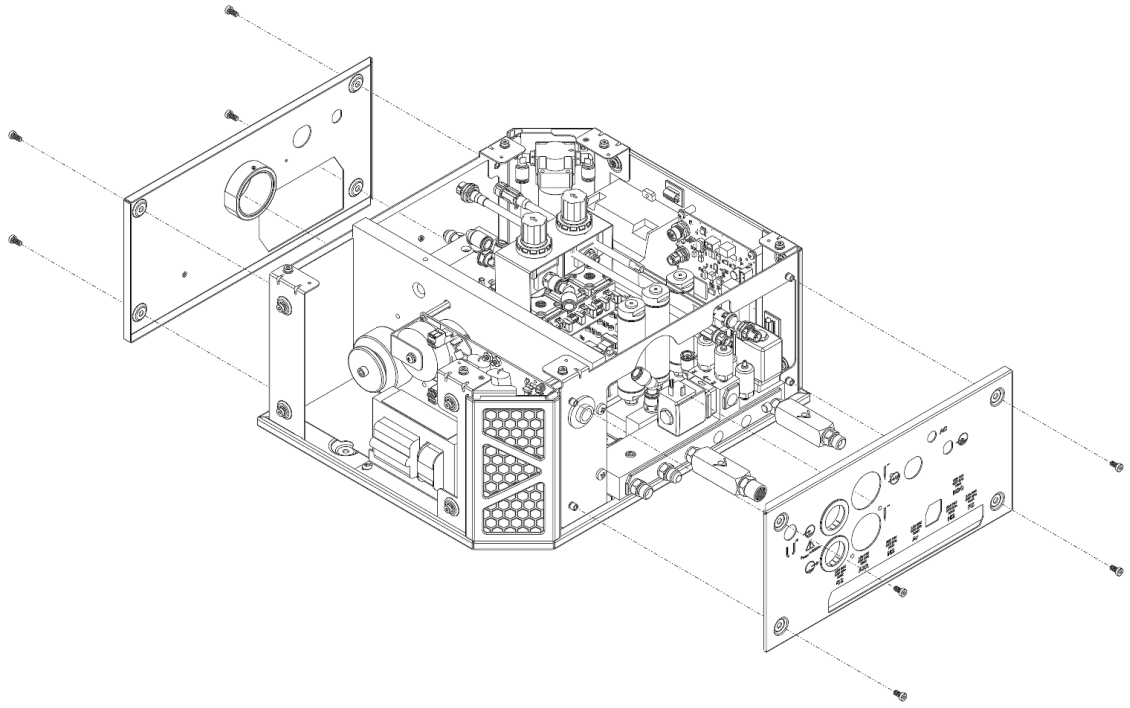
Install replacement part decal

38. Install the replacement parts decal included in the kit on the back side of the ignition side cover panel or wherever is convenient on the console.



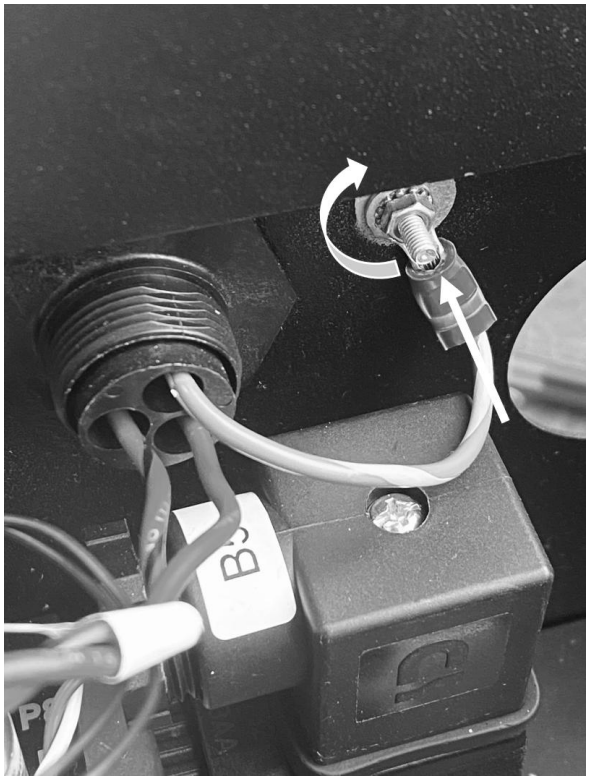
Install gas input and output side cover panels

39. Use a 3 mm hex key and four M3 socket head cap screws to install both the gas input (power supply) side and the gas output (TorchConnect console) side panels. Tighten to 3.0 to 3.5 Nm (27 to 30 in-lbs).



40. Install the grounding wire for power connector receptacle on both input (power supply) and output (TorchConnect console) side. Tighten to 1.0 to 1.2 Nm (9 to 11 in-lbs).

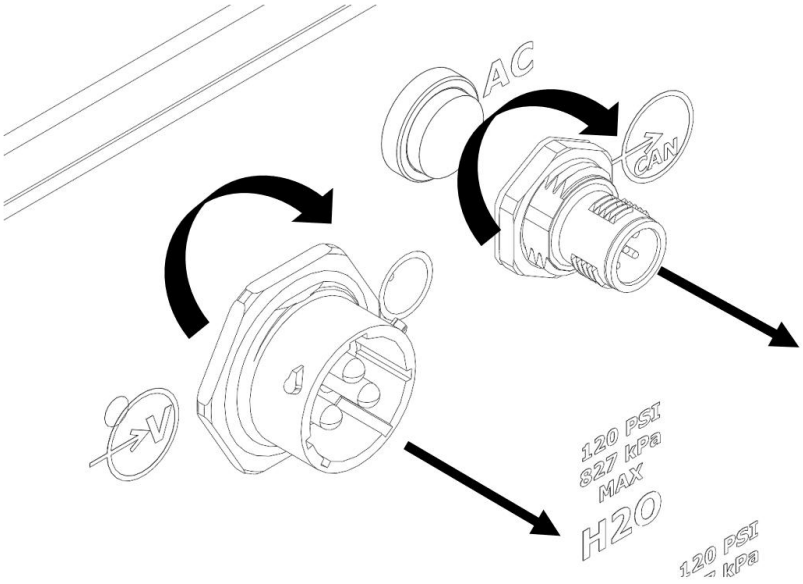


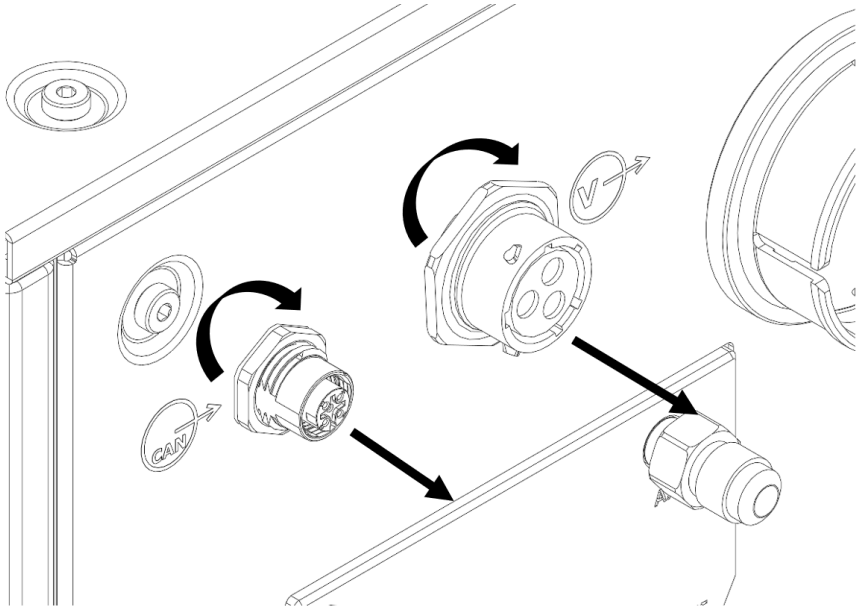


41. Connect the AC light cable on the input (power supply) side of the gas connect console.

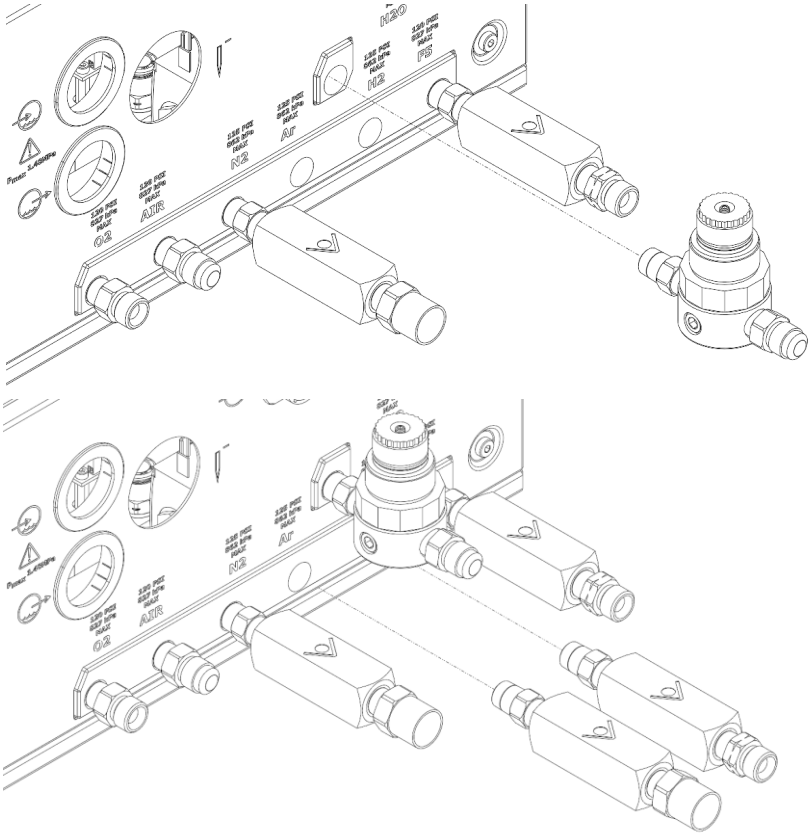


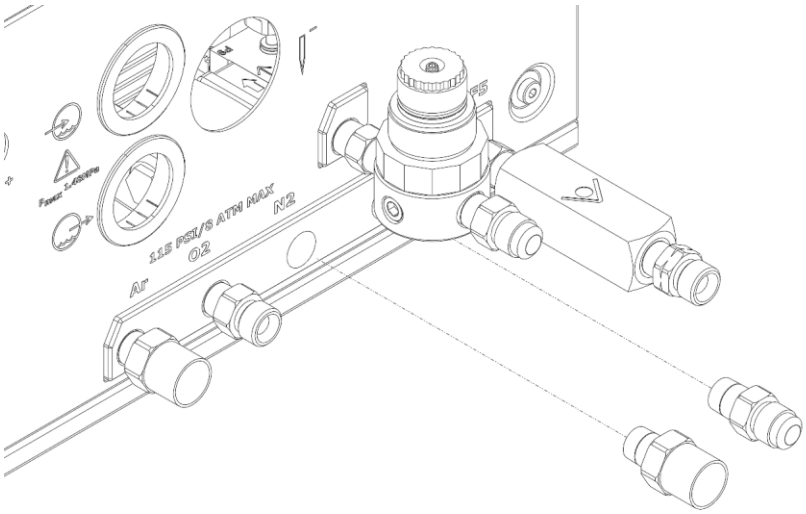
42. Use a 30 mm wrench to install the power receptacle housing panel nut on both input (power supply) and output (TorchConnect console) side. Tighten to 2.0 to 2.5 Nm (18 to 22 in-lbs). Use an 18 mm wrench to install the CAN cable receptacle panel nut on both input and output side. Tighten to 1.0 to 1.3 Nm (9 to 11 in-lbs).





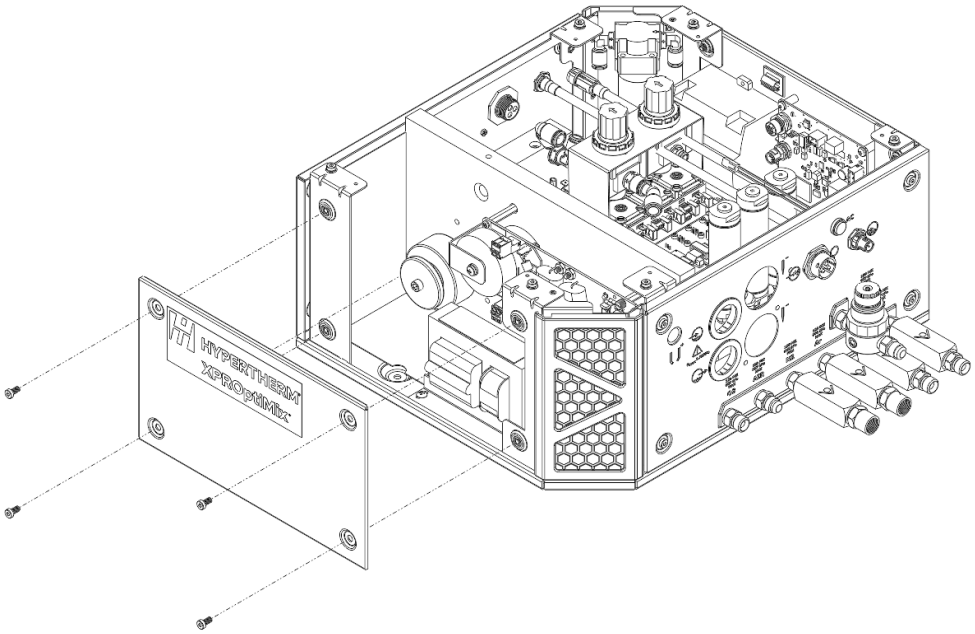
43. If you have an VWI or OptiMix gas connect console, install the water regulator, check valves, and fittings as needed. Tighten water regulator to 15 to 17 Nm (130 to 150 in-lbs). Tighten check valves and fittings to 10 to 12 Nm (90 to 110 in-lbs). Note that minimum amount of paste or liquid thread sealant can be applied as necessary. Do **not** use thread tape. Reference step 13.





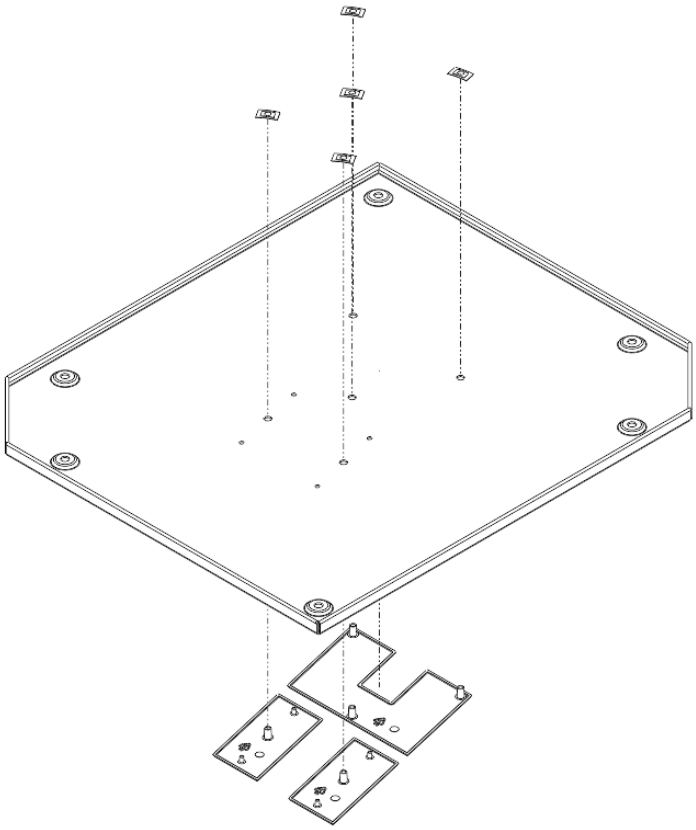
Install ignition side cover panel

44. Use a 3 mm hex key and four M3 socket head cap screws to install the ignition side cover panel of the gas connect console. Tighten to 3.0 to 3.5 Nm (27 to 30 in-lbs).

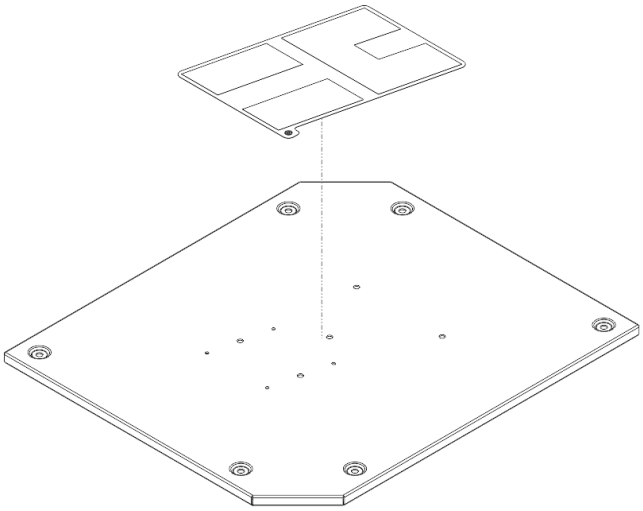


Install top cover panel

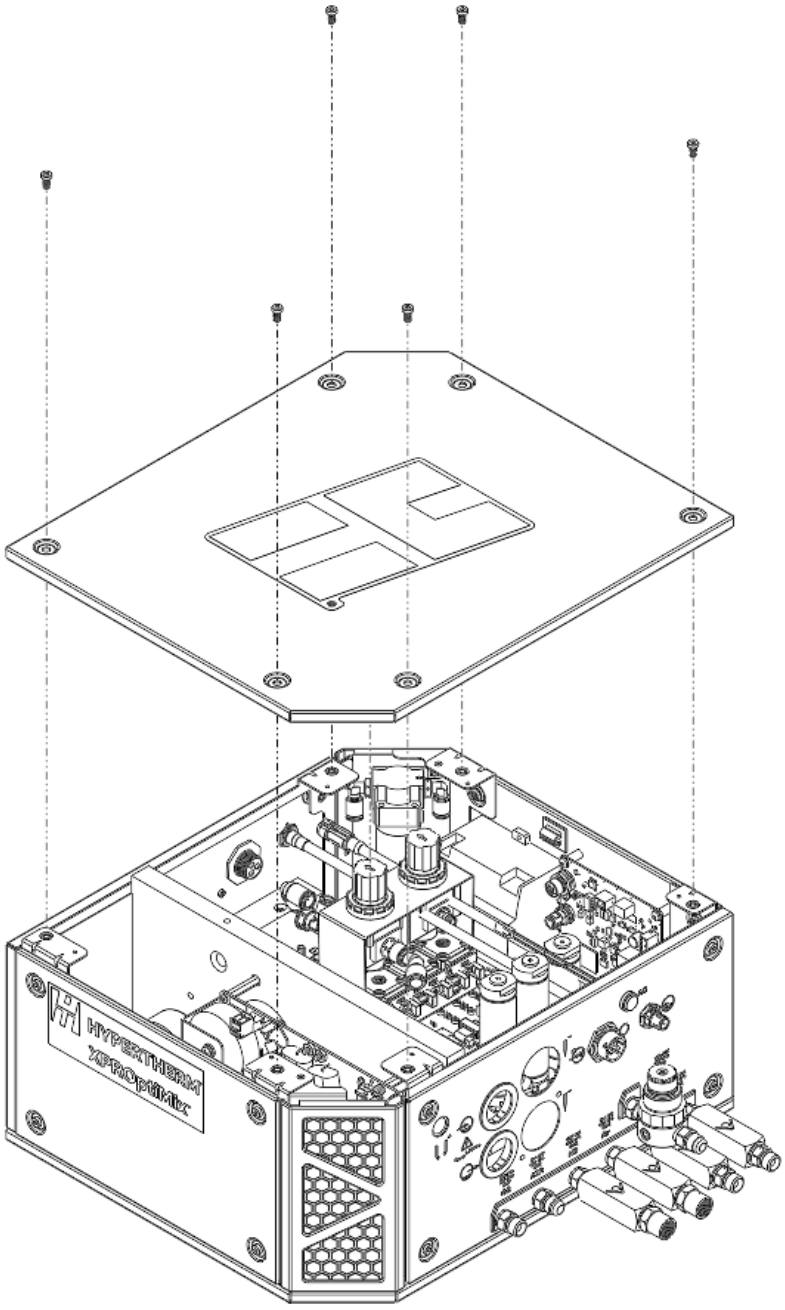
45. Remove the push nuts and the plastic ‘H’ from the top cover. This step is necessary to ensure the top cover panel has proper fitment with the new ignition panel assembly.



46. Affix the ‘H’ decal included in the kit to the top cover.



47. Use a 3 mm hex key and six M3 socket head cap screws to install the top cover to the gas connect console. Tighten to 3.0 to 3.5 Nm (27 to 30 in-lbs).



Connect the gas connect console to the cutting system

48. You have now completed the ignition upgrade process for the XPR gas connect console. Refer to the instruction manual that came with your cutting system to install power, CAN, pilot arc, gas, and coolant connections to the power supply and TorchConnect console.
49. Supply power to the cutting system, refer to the instruction manual that came with your cutting system for instructions.